

**PATENT**  
Attorney Docket No.: 011823-002660US

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

In re application of:

Landolfi et al.

Application No.: 09/718,998

Filed: November 22, 2000

For: IMPROVED HUMANIZED  
IMMONOGLOBULINS

Examiner: Anne L. Holleran

Art Unit: 1642

INFORMATION DISCLOSURE  
STATEMENT UNDER 37 CFR §1.97 and  
§1.98

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Sir:

The references cited on attached form PTO/SB/08A and PTO/SB/08B are being called to the attention of the Examiner. As discussed with the Examiner, copies of the references can be found in Application No. 09/325,000, filed June 1, 1999 (Attorney Docket No. 011823-002650US). Should the Examiner require additional copies of any references applicants would be happy to supply them, in which case the Examiner is invited to telephone the undersigned. It is respectfully requested that the cited references be expressly considered during the prosecution of this application, and the references be made of record therein and appear among the "references cited" on any patent to issue therefrom.

As provided for by 37 CFR 1.97(g) and (h), no representation is being made that a search has been conducted or that this statement encompasses all the possible relevant information, and no inference should be made that the information and references cited are, or are considered to

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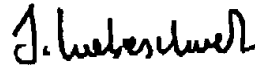
PATENT

Landolfi et al.  
Application No.: 09/718,998  
Page 2

be material to patentability because they are in this statement. No inference should be made that the information and references cited are prior art merely because they are in this statement.

Applicant believes that no fee is required for submission of this statement. However, if a fee is required, the Commissioner is authorized to deduct such fee from the undersigned's Deposit Account No. 20-1430. Please deduct any additional fees from, or credit any overpayment to, the above-noted Deposit Account.

Respectfully submitted,



Joe Liebeschuetz  
Reg. No. 37,505

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JOL:crf  
PA 3320573 v1

PTO/SB/08A (04-03)

Approved for use through 04/30/2003. OMB 0851-0031

U.S. Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE

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**INFORMATION DISCLOSURE  
STATEMENT BY APPLICANT**

(use as many sheets as necessary)

Page 1 of 17

**Complete if Known**

Application Number	09/718,998
Filing Date	November 22, 2000
First Named Inventor	Landolfi
Art Unit	1642
Examiner Name	Anne L. Holleran
Attorney Docket Number	011823-002660US

**U.S. PATENT DOCUMENTS**

Examiner	Cite No. <sup>1</sup>	Document Number	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		Number Kind Code <sup>2</sup> (if known)			
ADH	AA	US-6,548,640	04-15-2003	Winter	
	AB	US-6,407,213	06-18-2002	Carter et al.	
	AC	US-6,180,370	01-30-2001	Queen et al.	
	AD	US-4,578,335	03-25-1986	Urdal et al.	
	AE	US-4,816,397	03-28-1989	Boss et al.	
	AF	US-4,816,565	03-28-1989	Honjo et al.	
	AG	US-4,816,567	03-28-1989	Cabilly et al.	
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	AK	US-5,225,539	07-06-1990	Winter	
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	AM	US-5,585,089	12-17-1996	Queen et al.	
	AN	US-5,693,761	12-02-1997	Queen et al.	
	AO	US-5,693,762	12-02-1997	Queen et al.	

Examiner  
Signature

Anne L. Holleran

Date  
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12/15/03

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<sup>2</sup> Applicant's unique citation designation number (optional). <sup>3</sup> Kind Codes of U.S. Patent Documents at [www.uspto.gov](http://www.uspto.gov) or MPEP 601.04. <sup>4</sup> Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). <sup>5</sup> For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. <sup>6</sup> Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 18 if possible. <sup>7</sup> Applicant is to place a check mark here if English language Translation is attached.

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Examiner Name	Anne L. Holteran
Attorney Docket Number	011823-002660US

FOREIGN PATENT DOCUMENTS							
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		Country Code <sup>4</sup>	Number <sup>1</sup> Kind Code <sup>5</sup> (if known)				
ALH	AP	EP	0,120,694	10-03-1984			<input type="checkbox"/>
	AQ	EP	0,125,023	11-14-1984			<input type="checkbox"/> abstr. only
	AR	EP	0,171,496	02-19-1986			<input type="checkbox"/>
	AS	EP	0,173,494	03-05-1986			<input type="checkbox"/>
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	AV	EP	0,239,400	09-30-1987			<input type="checkbox"/>
	AW	EP	0,266,663	05-11-1988			<input type="checkbox"/>
	AX	EP	0,318,554	06-07-1989			<input type="checkbox"/>
	AY	EP	0,323,806	07-12-1989			<input type="checkbox"/>
	AZ	EP	0,328,404	08-16-1989			<input type="checkbox"/>
	BA	EP	0,365,997	05-02-1990			<input type="checkbox"/>
	BB	EP	0,368,684	05-16-1990			<input type="checkbox"/>
	BC	EP	0,125,023	06-05-1991			<input type="checkbox"/>
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	BE	EP	0,519,596	12-23-1992			<input type="checkbox"/>
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	BI	GB	2268745	01-19-1994			<input type="checkbox"/>
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	BK	WO	87/02671	05-07-1987			<input type="checkbox"/>
	BL	WO	88/09344	12-01-1988			<input type="checkbox"/>
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	BQ	WO	91/09967	07-11-1991			<input type="checkbox"/>
	BR	WO	91/09968	07-11-1991			<input type="checkbox"/>
Examiner Signature	<i>Anne L. Holteran</i>			Date Considered	12/15/03		

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First Named Inventor	Landoffi
Art Unit	1642
Examiner Name	Anne L. Holleran
Attorney Docket Number	011823-002660US

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		Country Code <sup>3</sup>	Number <sup>4</sup>	Kind Code <sup>5</sup> (if known)				
PH 17	BS	WO	92/11018		07-09-1992			<input type="checkbox"/>
	BT	WO	92/11383		07-09-1992			<input type="checkbox"/>
	BU	WO	93/02191		02-04-1993			<input type="checkbox"/>
	BV	WO	93/06231		04-01-1993			<input type="checkbox"/>
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	BX	WO	96/05229		02-22-1996			<input type="checkbox"/>
								<input type="checkbox"/>
								<input type="checkbox"/>

Examiner Signature

Anne L. Holleran

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PA 9370673 v1

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Application Number	09/718,988
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First Named Inventor	Landolfi
Art Unit	1642
Examiner Name	Anne L. Holleran
Attorney Docket Number	011823-002660US

NON PATENT LITERATURE DOCUMENTS			
Examiner Initials *	Cite No. <sup>1</sup>	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T <sup>2</sup>
RLH	BY	ADAIR et al., "Humanization of the murine anti-human CD3 monoclonal antibody OKT3," Hum. Antibod. Hybridomas, 5, (1994), pgs.41-47	
	BZ	AMIT et al., "Three-dimensional structure of an antigen-antibody complex at 2.8 A resolution," Science, 233 (1986), pgs. 747-753	✓
	CA	BARTON et al., Protein Sequencing Alignment and Database Screening, Protein Structure Prediction, 31-63, 1996.	
	CB	BETTER et al., "Eschericia coli Secretion of an Active Chimeric Antibody Fragment," Science, 240 (1988) pgs. 1041-1043	
	CC	BIRD et al., "Single-Chain Antigen-Binding Proteins," Science, 242 (1988) pgs. 423-426	
	CD	BOULIANNE et al., "Production of functional chimeric mouse/human antibody," Nature, 312 (1984) pgs. 643-646	
	CE	CARON et al., "Biological and Immunological Features of humanized M195 (Anti-CD33) Monoclonal Antibodies," Cancer Research, V. 52, (1992), pgs. 6761-6767	✓
	CF	CARTER et al., "Humanization of an anti-p185 <sup>HER2</sup> antibody for human cancer therapy," Proc. Natl. Acad. Sci. USA, 89 (1992) pgs. 4285-4289	✓
	CG	CHEETHAM, "Reshaping the antibody combining site by CDR replacement- tailoring or tinkering to fit?", Prot. Eng., 2(3) (1988) pgs. 170-172	
	CH	CHOTHIA et al., "The relation between the divergence of sequence and structure in proteins," EMBO J., 5 (1986), pgs. 823-826	
	CI	CHOTHIA et al., "Transmission of conformational change in insulin," Nature, 302 (1983) pgs. 500-505	
	CJ	CHOTHIA et al., "The predicted structure of immunoglobulin D1.3 and its comparison with crystal structure," Science, 233 (1986), pgs. 755-758	
	CK	CHOTHIA et al., "Canonical Structures for the Hypervariable Regions of immunoglobulins," J. Mol. Biol., 196 (1987) pgs. 901-917	✓
✓	CL	CHOTHIA et al., "Conformations of immunoglobulin Hypervariable Regions," Nature, 342 (1989) pgs. 877-883	

Examiner Signature	<i>Anne L. Holleran</i>	Date Considered	12/15/03
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of

17

**Complete if Known**

Application Number	09/718,888
Filing Date	November 22, 2000
First Named Inventor	Landolfi
Art Unit	1642
Examiner Name	Anne L. Holleran
Attorney Docket Number	011823-002660US

**NON PATENT LITERATURE DOCUMENTS**

Examiner Initials *	Cite No. <sup>1</sup>	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T <sup>2</sup>
HCH	CM	CHOTHIA et al., "Domain association in immunoglobulin molecules. The packing of variable domains," J. Mol. Biol., 186 (1985) pgs. 651-663	
	CN	CO et al., "Chimeric and humanized antibodies with specificity for the CD33 antigen," J. Immunol., 148 (1992) pgs. 1149-1154	✓
	CO	CO et al., "Humanized antibodies for antiviral therapy," Proc. Natl. Acad. Sci. USA, 88 (1991) pgs. 2869-2873	✓
	CP	CO et al., "Humanized anti-Lewis Y antibodies in vitro properties and pharmacokinetics in rhesus monkeys," Cancer Res., 56 (1996) pgs. 1118-1125	
	CQ	COLMAN et al., "Three-dimensional structure of a complex of antibody with influenza virus neuraminidase," Nature, 326 (1987) pgs. 358-362	
	CR	CORTI et al., "Idiotypic determining regions of a mouse monoclonal antibody and its humanized versions. Identification of framework residues that affect idiotype expression," J. Mol. Biol., 235 (1994) pgs. 53-60	
	CS	COUTO et al., "Anti-BA46 monoclonal antibody Mc3: humanization using a novel positional consensus and in vivo and in vitro characterization," Cancer Research, Supplement 55, (1995) pgs. 1717-1722	
	CT	COUTO et al., "Humanization of KC4G3, an anti-human carcinoma antibody," Hybridoma, 13 (1994) pgs. 215-219	
	CU	CURTI et al., " , " Crit. Rev. Oncol./Hematology, 14:29-39	
	CV	DAUGHERTY et al., "Polymerase chain reaction facilitates the cloning, CDR-grafting, and rapid expansion of a murine monoclonal antibody directed against the CD18 component of leukocyte integrins," Nuc. Acids Res., 19 (1991) pgs. 2471-2476	✓
	CW	DAVIES et al., "Structural basis of antibody function," Ann. Rev. Immunol., 1 (1983) pgs. 87-117	
	CX	DAVIES et al., "Antibody-antigen complexes," J. Biol. Chem., 263(22) (1988), pgs. 10541-10544	
	CY	ELLIS, "Engineered anti-CD38 monoclonal antibodies for immunotherapy of multiple myeloma," J. Immunol., 155 (1995) pgs. 925-937	

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<b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b>  (use as many sheets as necessary)		Application Number	09/718,998
		Filing Date	November 22, 2000
		First Named Inventor	Landoffi
		Art Unit	1642
		Examiner Name	Anne L. Holleran
		Attorney Docket Number	011823-002860US
Page	6	of	17

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ALH	CZ	ELLISON et al., "The nucleotide sequence of a human immunoglobulin c (gamma) gene," Nuc. Acids Res., 10 (1982) pgs. 4071-4079	
	DA	BPP et al., "Crystal and molecular structure of a dimer composed of the variable portions of the Bence-Jones protein REI," Eur. J. Biochem., 45 (1974) pgs. 513-524	
	DB	FARRAR et al., "The biochemistry, biology, and the role of interleukin-2 in the induction of cytotoxic T cell and antibody-forming B cell receptors," Immunol. Rev., 63 (1982) pgs. 129-166	
	DC	FELDMANN et al., "A hypothetical space-filling model of the V-regions of the galactin-binding myeloma immunoglobulin J539," Mol. Immunol., 18 (1981) pgs. 683-698	
	DD	FOOTE et al., "Antibody framework residues affecting the conformation of hypervariable loops," J. Mol. Biol., 224 (1992) pgs. 487-499	
	DE	GEORGE et al., Current Methods in Sequence Comparison and Analysis in Macromolecular Sequencing and Synthesis, 127-148, 1988.	
	DF	GORMAN et al., "Reshaping a therapeutic CD4 antibody," Proc. Natl. Acad. Sci. USA, 88 (1991) pgs. 4181-4185	✓
	DG	GREENE et al., "Growth of Human T Lymphocytes: An Analysis of Interleukin 2 and its Cellular receptor," Progress in Hematology XIV, E. Brown, ed., Grune and Stratton, New York, (1986) pgs. 283-301	
	DH	GROVES et al., "Production of an Ovine Monoclonal Antibody to testosterone by an Interspecies Fusion," Hybridoma, 6:71-76, 1987.	
	DI	GURA et al., " , " Science, 278:1041-1042	
	DJ	HALE et al., "Remission Induction in Non-Hodgkin Lymphoma with Reshaped Human Monoclonal Antibody CAMPATH-1H," Lancet, (2)(12/17/88) pgs. 1394-1399	
	DK	HARTWELL et al., " , " Science, 278:1064-1068 (1997).	
	DL	HIETER et al., "Cloned Human and Mouse Kappa Immunoglobulin Constant and J Region Genes Conserve Homology in Functional Segments," Cell, 22 (1980) pgs. 197-207	
✓	DM	HIETER, "Evolution of human immunoglobulin kappa J region genes," J. Biol. Chem., 257 (1982) pgs. 1516-1522	
Examiner Signature	Anne L. Holleran		Date Considered 12/15/03

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Substitute for form 1449/PTO		<b>Complete if Known</b>	
<b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b>  (use as many sheets as necessary)		Application Number	09/718,998
		Filing Date	November 22, 2000
		First Named Inventor	Landolfi
		Art Unit	1642
		Examiner Name	Anne L. Holleran
		Attorney Docket Number	011823-002660US
Page	7	of	17

NON PATENT LITERATURE DOCUMENTS			
Examiner Initials *	Cite No. <sup>1</sup>	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T <sup>2</sup>
mt	DN	HUSTON et al., "Protein engineering of antibody binding sites: Recovery of specific activity in an anti-digoxin single-chain Fv analogue produced in Escherichia coli," Proc. Natl. Acad. Sci. USA, 85 (1988) pgs. 5879-5883.	
	DO	JAIN et al., "Scientific American, 271:58-65	
	DP	JONES et al., "Replacing the complementarity-determining regions in a human antibody with those from a mouse," Nature, 321 (1986) pgs. 522-525	✓
	DQ	JUNGHANS et al., "Anti-Tao-H, a humanized antibody to the interleukin 2 receptor with new features for immunotherapy in malignant and immune disorders," Cancer Res., 50(1990) pgs. 1495-1502	
	DR	KABAT, "Origins of antibody complementarity and specificity-hypervariable regions and misgene hypothesis," J. Immunol., 125 (1980) pgs. 961-969	
	DS	KABAT, Sequences of Proteins of Immunological Interest, US Dept. of Health and Human Services, 1983 Edition, pages i - xc, 15-32.	
	DT	KABAT, Sequences of Proteins of Immunological Interest, US Dept. of Health and Human Services, 1987 Edition, pages vi-xvii.	
	DU	KABAT, Sequences of Proteins of Immunological Interest, US Dept. of Health and Human Services, 1991 Edition, pages xiii-xix, xlii - lxi.	
	DV	KETTLEBOROUGH et al., "Humanization of a Mouse Monoclonal Antibody by CDR Grafting, the Importance of Framework Residues on Loop Formation", Protein Engineering, (1991) 4(7), pgs. 773-783	✓
	DW	KIRKMAN et al., "Administration of an anti-interleukin 2 receptor monoclonal antibody prolongs cardiac allograft survival in mice," J. Exp. Med., 162 (1985) pgs. 358-362	
	DX	KUPIEC-WEGLINSKI et al., "Therapy with monoclonal antibody to interleukin 2 receptor spares suppressor T cells and prevents or reverses acute allograft rejection in rats," Proc. Natl. Acad. Sci. USA, 3 (1986) pgs. 2624-2627	
	DY	LEONARD et al., "The human receptor for T-cell growth factor," J. Biol. Chem., 260 (1985) pgs. 1872-1880	
	DZ	LESK et al., "How different amino acid sequences determine similar protein structures: the structure and evolutionary dynamics of the globins," J. Mol. Biol., 136 (1980) pgs. 225-270	

Examiner Signature	<i>Anne L. Holleran</i>	Date Considered	12/15/03
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<b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b>  (use as many sheets as necessary)		Application Number	09/718,898
		Filing Date	November 22, 2000
		First Named Inventor	Landolfi
		Art Unit	1642
		Examiner Name	Anne L. Holleran
Page	8	of	17
		Attorney Docket Number	011823-002660US

NON PATENT LITERATURE DOCUMENTS			
Examiner Initials *	Cite No. 1	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T <sup>2</sup>
AVH	EA	LESK et al., "Evolution of proteins formed by $\beta$ -sheets. II. The core of the immunoglobulin domains," J. Mol. Biol., 160 (1982) pgs. 325-342	
	EB	LIU et al., "Expression of mouse/human immunoglobulin heavy-chain cDNA in lymphoid cells," Gene, 54 (1987) pgs. 33-40	
	EC	MAEDA et al., "Construction of reshaped human antibodies with HIV-neutralizing activity," Hum. Antibod. Hybrid., 2 (1991) pgs. 124-134	
	ED	MATSUMURA, "Hydrophobic stabilization in T4 lysozyme determined directly by multiple substitutions of Ile 3.," Nature, 334 (1988) pgs. 406-410	
	EE	MORRISON et al., "Chimeric human antibody molecules: Mouse antigen binding domains with human constant region domains," Proc. Natl. Acad. Sci. USA, 81 (1984) pgs. 6851-6859	
	EF	MORRISON, S.L., "Transfectomas Provide Novel Chimeric Antibodies," Science, 229 (1985) pgs. 1202-1207	
	EG	NAKATANI et al., "Humanization of mouse anti-human IL-2 receptor antibody B-B10," Protein Engineering, 7 (1994) pgs. 435-443	
	EH	NEUBERGER et al., "A hapten-specific chimaeric IgE antibody with human physiological effector function," Nature, 314 (1985) pgs. 268-270.	
	EI	OHTOMO et al., "Humanization of mouse ONS-M21 antibody with the aid of hybrid variable regions," Molecular immunology, 32 (1995) pgs. 407-416	
	EJ	PADLAN, Cold Spring Harbor Symposia on Quantitative Biology, XLI (41) (1977) pgs. 627-637	
	EK	PADLAN, "Anatomy of the antibody molecule," Molecular Immunol., 31 (1994) pgs. 169-217	
	EL	PALM et al., "The primary structure of a crystalline, monoclonal immunoglobulin-L-chain of the kappa type, subgroup I (Bence-Jones protein Rei): a contribution to the elucidation of the three-dimensional structure of the immunoglobulins," Hoppe-Seyler's Z. Physio. Chem., 354 (1973) pgs. 1651-1654	
✓	EM	PALM et al., "The primary structure of a crystalline monoclonal immunoglobulin kappa-type L-chain, subgroup I (Bence-Jones protein Rei); isolation and characterization of the tryptic peptides; the complete amino acid sequence of the protein; a contribution to the elucidation of the three-dimensional structure of antibodies, in particular their combining site," Hoppe-Seyler's Z. Physio. Chem., 356 (1975) pgs. 167-191	

Examiner Signature	<i>Anne L. Holleran</i>	Date Considered	12/15/03
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**Complete if Known**

Application Number	09/718,998
Filing Date	November 22, 2000
First Named Inventor	Landolfi
Art Unit	1642
Examiner Name	Anne L. Holleran
Attorney Docket Number	011823-002680US

**NON PATENT LITERATURE DOCUMENTS**

Examiner Initials *	Cite No. <sup>1</sup>	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T <sup>2</sup>
it	EN	PANKA et al., Variable region framework differences result in decreased or increased affinity of variant digoxin antibodies," Proc. Natl. Acad. Sci. USA, 85 (1988) pgs. 3080-3084	✓
	EO	PRESTA, "Humanization of an anti-vascular endothelial growth factor monoclonal antibody for the therapy of solid tumors and other disorders," Cancer Research, 57 (1997) pgs. 4593-4599	
	EP	QUEEN et al., "A humanized antibody that binds to the interleukin 2 receptor," Proc. Natl. Acad. Sci. USA, 86 (1989) pgs. 10029-10033	✓
	EQ	REECK et al., "Homology" in proteins and nucleic acids: a terminology muddle and a way out of it, Cell 50 (1987) pg. 667	
	ER	RIECHMANN et al., "Reshaping human antibodies for therapy," Nature, 332 (1988) pgs. 323-327	✓
	ES	ROBERTS et al., "Generation of an antibody with enhanced affinity and specificity for its antigen by protein engineering," Nature, 328 (1987), pgs. 731-734	
	ET	RODRIGUES et al., "Engineering a humanized bispecific F(ab') <sub>2</sub> fragment for impaired binding to T cells," Int. J. Cancer: Supplement 7 (1992) pgs. 45-50	
	EU	ROSEN, Dictionary of Immunology, 12, 50, 99, 100	
	EV	ROUTLEDGE et al., "A humanized monovalent CD3 antibody which can activate homologous complement," Eur. J. Immunol., 21(1991) pgs. 2717-2725	✓
	EW	SAHAGAN et al., "A Genetically Engineered Murine/Human Chimeric Antibody Retains Specificity for Human Tumor-Associated Antigens," J. Immunol., 137 (1986) pgs. 1066-1074	
	EX	SAUL et al., "Preliminary refinement and structural analysis of the Fab fragment from human immunoglobulin new at 2.0 Å resolution," J. Biol. Chem., 253(2) (1978) pgs. 585-597	
	EY	SHA, et al., "A heavy-chain grafted antibody that recognizes the tumor-associated TAG72 antigen," Cancer Biotherapy, 9 (1994) pgs. 341-349	
	EZ	SHALABY et al., "Development of humanized bispecific antibodies reactive with cytotoxic lymphocytes and tumor cells overexpressing the HER2 protooncogene," J. Exp. Med., 175 (1992) pgs. 217-225	✓
✓	FA	SHARON et al., "Expression of a V <sub>H</sub> C <sub>κ</sub> chimeric protein in mouse myeloma cells," Nature, 309(1984) pgs. 364-367	

Examiner  
Signature

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		Filing Date	November 22, 2000
		First Named Inventor	Landolfi
		Art Unit	1642
		Examiner Name	Anne L. Holleran
		Attorney Docket Number	Q11823-002660US
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itit	FB	SHEARMAN et al., "Construction, expression and characterization of humanized antibodies directed against the human $\alpha/\beta$ T cell receptor," J. Immunol., 147 (1991) pgs. 4366-4373	✓
	FC	SHERIFF et al., "Three-dimensional structure of an antibody-antigen complex," Proc. Natl. Acad. Sci. USA, 84 (1987) pgs. 8075-8079	
	FD	SLADEK et al., "Collateral sensitivity to cross-linking agents exhibited by cultured L1210 cells resistant to oxazaphosphorines," Cancer Research 45 (1985) pgs. 625-629	
	FE	STANFORD et al., "A predictive method for determining possible three-dimensional foldings of immunoglobulin backbones around antibody combining sites," J. Theor. Biol., 88 (1981) pgs. 421-439	
	FF	TAKEDA et al., "Construction of chimeric processed immunoglobulin genes containing mouse variable and human constant region sequences," Nature, 314 (1985) pgs. 452-454	
	FG	TAN et al., "A Human-Mouse Chimeric Immunoglobulin Gene with a Human Variable Region is Expressed in Mouse Myeloma Cells," J. Immunol., 135 (1985) pgs. 3564-3567	
	FH	TEMPEST et al., "Reshaping a human monoclonal antibody to inhibit human respiratory syncytial virus infection in vivo," Bio/Technology, 9 (1991) pgs. 266-271	✓
	FI	TEMPEST et al., "A humanized anti-tumor necrosis factor-alpha monoclonal antibody that acts as a partial, competitive antagonist of the template antibody," Hybridoma, 13 (1994) pgs. 183-190	
	FJ	TEMPEST et al., "Identification of framework residues required to restore antigen binding during reshaping of a monoclonal antibody against the glycoprotein gB of human cytomegalovirus," Int. J. Biol. Macromol., 17 (1995) pgs. 37-42	
	FK	TRAMONTANO et al., "Framework residue 71 is a major determinant of the position and conformation of the second hypervariable region in the VH domains of immunoglobulins," J. Mol. Biol., 215 (1990) pgs. 175-182	
	FL	UCHIYAMA et al., "A monoclonal antibody (anti-Tac) reactive with activated and functionally mature human T-cells," J. Immunol., 126 (1981) pgs. 1393-1397	✓
	FM	VERHOEYEN et al., "Reshaping Human Antibodies: Grafting an Antilysozyme Activity," Science 239 (1988) pgs. 1534-1536	✓
	FN	VERHOEYEN, M., "Engineering of antibodies," BioEssays, 8(2) (1988) pgs. 74-78	

Examiner Signature	<i>Anne L. Holleran</i>	Date Considered	12/15/03
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**INFORMATION DISCLOSURE  
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**Complete if Known**

Application Number	09/718,898
Filing Date	November 22, 2000
First Named Inventor	Landolfi
Art Unit	1642
Examiner Name	Anne L. Holleran
Attorney Docket Number	011823-002660US

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174	FO	VINCENTI et al., "Interleukin-2-receptor blockade with daclizumab to prevent acute rejection in renal transplantation. Daclizumab Triple Therapy Study Group," New Engl. J. Med., 338 (1998) pgs. 161-165	
	FP	VITTETA et al., "Redesigning nature's Poisons to Create Anti-Tumor Reagents," Science, 238 (1987) pgs. 1098-1104	
	FQ	WALDMANN et al., "Interleukin 2 receptor (Tac antigen) expression in HTLV-I-associated adult T-cell leukemia," Cancer Res., 45 (1985) pgs. 4559s-4562s	
	FR	WALDMANN, "The Structure, Function, and Expression of Interleukin-2 Receptors on Normal and Malignant Lymphocytes," Science, 232 (1986) pgs. 727-732	
	FS	WOODLE et al., "Humanized OKT3 antibodies: successful transfer of immune modulating properties and idiotype expression," J. Immunol., 148 (1992) pgs. 2756-2763	✓
	FT	WU et al., "An analysis of the sequences of the variable regions of Bence Jones proteins and myeloma light chains and their implications for antibody complementarity," J. Exp. Med., 132 (1970) pgs. 211-250	
	FU	"Biosym Technologies" in New Products, Chemical Design Automation, 3(4), December 1988	
	FV	"Polygen Corporation" in New Products, Chemical Design Corporation, Automation, 3(11), November 1988	
	FW	Opposition by Protein Design Labs, Inc. to European Patent No. 0 460 167 of Cell Tech Therapeutics Limited entitled "Humanised Antibodies" (July 10, 1996).	
	FX	Opposition to EP 0451216, Submissions of Medical Research Council (October 23, 1996).	
	FY	Opposition to EP 0451216, Attachment to Medical Research Council's submissions (October 23, 1996): Declaration of G. Winter.	
	FZ	Opposition to EP 0451216, Submissions of ICOS Corporation (October 22, 1996).	
✓	GA	Opposition to EP 0451216, Attachment to ICOS Corporation's submissions (October 1, 1996): Declaration of Dr. Tempest.	

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**Complete if Known**

Application Number	09/718,988
Filing Date	November 22, 2000
First Named Inventor	Landolfi
Art Unit	1842
Examiner Name	Anne L. Holleran
Attorney Docket Number	011823-002680US

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ALH	GB	Opposition to EP 0451216, Submissions of Ciba-Geigy AG (October 7, 1996)	
	GC	Opposition to EP 0451216, Supplemental Submissions of Ciba-Geigy AG (October 24, 1996).	
	GD	Opposition to EP 0451216, Attachment to Ciba-Geigy AG's submissions: Declaration of Dr. Chothia (October 18, 1996).	
	GE	Opposition to EP 0451216, Submissions of Celltech Therapeutics (October 24, 1996)	
	GF	Opposition to EP 0451216, Submissions of Bayer AG (October 21, 1996).	
	GG	Opposition to EP 0451216, Submissions of Chiron Corporation (October 21, 1996).	
	GH	Opposition to EP 0451216, Submissions SmithKlein Beecham plc (October 21, 1996).	
	GI	Opposition to EP 0451216, Submissions of IDEC Pharmaceuticals (October 24, 1996).	
	GJ	Opposition to EP 0451216, Attachment to IDEC Pharmaceuticals' submissions (October 24, 1996): Declaration of Dr. Padlan.	
	GK	Opposition to EP 0451216, Submissions of Biotest Pharma GbmH (October 22, 1996).	
	GL	Opposition to EP 0451216, Attachment to Biotest Pharma GbmH's submissions on October 22, 1996: Experimental Report.	
	GM	Opposition to EP 0451216, Submissions of Biotransplant, Inc. (October 23, 1996).	
	GN	Opposition to EP 0451216, Attachment to Biotransplant, Inc.'s submissions on October 23, 1996: Declaration of Dr. Rees.	
	GO	Opposition to EP 0451216, Submissions of Bristol-Myers Squibb Company (October 24, 1996).	

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PA 3320573 v1

PTO/SB/08B (04-03)

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Substitute for form 1449/PTO		<b>Complete if Known</b>	
<b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b>  (use as many sheets as necessary)		Application Number	09/718,998
		Filing Date	November 22, 2000
		First Named Inventor	Landolfi
		Art Unit	1642
		Examiner Name	Anne L. Holleran
		Attorney Docket Number	011823-002660US
Page	13	of	17

NON PATENT LITERATURE DOCUMENTS			
Examiner Initials *	Cite No. <sup>1</sup>	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T <sup>2</sup>
ALH	GP	Opposition to EP 0451216, Submissions of Glaxo Group Limited (October 22, 1996).	
	GQ	Opposition to EP 0451216, Submissions of Boehringer Ingelheim GmbH (October 23, 1996).	
	GR	Opposition to EP 0451216, Submissions of Merck Patent GmbH (October 21, 1996) (In German language and English translation).	
	GS	Opposition to EP 0451216, Submissions of Chugai Seiyaku Kabushiki Kaisha (October 23, 1996).	
	GT	Opposition to EP 0451216, Submissions of Schering Corp. (October 22, 1996).	
	GU	Opposition to EP 0451216, Submissions of Ixsys, Inc. (October 23, 1996).	
	GV	Opposition to EP 0451216, Submissions of Genentech Inc. (October 23, 1996).	
	GW	Opposition to EP 0451216, Attachment to Genentech's submissions on October 23, 1996: Declaration of Dr. Riechmann.	
	GX	Opposition to EP 0451216, Submissions of Protein Design Labs, Inc. (April 7, 1998) including (i) Letter to EPO and (ii) Observations.	
	GY	Opposition to EP 0451216, Third Party Observations, May 25, 1998.	
	GZ	Opposition to EP 0451216, Further Submissions of Medical Research Council, June 24, 1998.	
	HA	Opposition to EP 0451216, Summons to Attend Oral Proceedings, May 12, 1999.	
	HB	Opposition to EP 0451216, Further Submissions of Protein Design Labs, Inc., September 17, 1999.	
	HC	Opposition to EP 0451216, Further Submissions of Protein Design Labs, Inc., October 26, 1999.	
Examiner Signature	Anne L. Holleran		Date Considered 12/15/03

\* EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 809. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

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PTO/SB/083 (04-03)

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**INFORMATION DISCLOSURE  
STATEMENT BY APPLICANT**

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**Complete if Known**

Application Number	08/718,998
Filing Date	November 22, 2000
First Named Inventor	Landolfi
Art Unit	1642
Examiner Name	Anne L. Holleran
Attorney Docket Number	011823-002660US

NON PATENT LITERATURE DOCUMENTS			
Examiner Initials *	Cite No. 1	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T 2
ALH	HD	Opposition to EP 0451216, Further Submissions of Protein Design Labs, Inc., December 1, 1999.	
	HE	Opposition to EP 0451216, Further Third Party Observations, December 14, 1999.	
	HF	Opposition to EP 0451216, Further Submissions of Celltech Therapeutics, December 16, 1999.	
	HG	Opposition to EP 0451216, Attachment to Celltech Therapeutics' submissions of December 16, 1999: Declaration of Thornton/Martin.	
	HH	Opposition to EP 0451216, Attachment to Celltech Therapeutics' submissions of December 16, 1999: printouts from Protein Design Labs, Inc.'s website.	
	HI	Opposition to EP 0451216, Attachment to Celltech Therapeutics' submissions of December 16, 1999: Tables showing derivatization of the antibody domains referred to in Fig. 3 / line 4 and Fig. 4F of WO 88/09344.	
	HJ	Opposition to EP 0451216, Attachment to Celltech Therapeutics' submissions of December 16, 1999: Schomburg, in Advances in Protein Design, Blocker et al. (Eds.), 1989, pp. 45-56.	
	HK	Opposition to EP 0451216, Further Submissions of Genentech, Inc., December 17, 1999.	
	HL	Opposition to EP 0451216, Attachment to Genentech's submissions of December 17, 1999: Declaration of Verhoeyen (including exhibits A, B and C).	
	HM	Opposition to EP 0451216, Attachment to Genentech's submissions of December 17, 1999: Declaration of Shak (including exhibits A, B and C).	
	HN	Opposition to EP 0451216, Attachment to Genentech's submissions of December 17, 1999: Declaration of Presta (including exhibits A and B).	
	HO	Opposition to EP 0451216, Attachment to Genentech's submissions of December 17, 1999: Reply of Protein Design Labs, Inc. in European patent application 92903551.7.	
	HP	Opposition to EP 0451216, Attachment to Genentech's submissions of December 17, 1999: Letter of Dr. Seemann.	

Examiner Signature	<i>Anne L. Holleran</i>	Date Considered	12/15/03
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**INFORMATION DISCLOSURE  
STATEMENT BY APPLICANT**

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Page 15 of 17

**Complete if Known**

Application Number	09/718,998
Filing Date	November 22, 2000
First Named Inventor	Landolfi
Art Unit	1642
Examiner Name	Anne L. Holleran
Attorney Docket Number	011823-002660US

**NON PATENT LITERATURE DOCUMENTS**

Examiner Initials *	Cite No. <sup>1</sup>	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T <sup>2</sup>
ALH	HQ	Opposition to EP 0451216, Observations of Protein Design Labs, Inc., December 17, 1999.	
	HR	Opposition to EP 0451216, Attachment to Observations of Protein Design Labs, Inc. submitted on December 17, 1999: Declaration of F. Vincenti (including exhibits 1 and 2).	
	HS	Opposition to EP 0451216, Attachment to Observations of Protein Design Labs, Inc. submitted on December 17, 1999: Declaration of D. A. Scheinberg (including exhibits 1-4).	
	HT	Opposition to EP 0451216, Attachment to Observations of Protein Design Labs, Inc. submitted on December 17, 1999: Declaration of M. Sung Co and Experimental report.	
	HU	Opposition to EP 0451216, Attachment to Observations of Protein Design Labs, Inc. submitted on December 17, 1999: Declaration of C. Nan Chang and Experimental report.	
	HV	Opposition to EP 0451216, Attachment to Observations of Protein Design Labs, Inc. submitted on December 17, 1999: Declaration of R. D. Kornberg.	
	HW	Opposition to EP 0451216, Attachment to Observations of Protein Design Labs, Inc. submitted on December 17, 1999: Declaration of M. Levitz.	
	HX	Opposition to EP 0451216, Attachment to Observations of Protein Design Labs, Inc. submitted on December 17, 1999: Declaration of A. B. Edmondson.	
	HY	Opposition to EP 0451216, Attachment to Observations of Protein Design Labs, Inc. submitted on December 17, 1999: Declaration of R. Kirkman.	
	HZ	Opposition to EP 0451216, Attachment to Observations of Protein Design Labs, Inc. submitted on December 17, 1999: Declaration of R. Junghans (including exhibits 1-6).	
	IA	Opposition to EP 0451216, Attachment to Observations of Protein Design Labs, Inc. submitted on December 17, 1999: Declaration of M. Vasquez.	
	IB	Opposition to EP 0451216, Attachment to Observations of Protein Design Labs, Inc. submitted on December 17, 1999: Declaration of D. Panka.	
	IC	Opposition to EP 0451216, Attachment to Observations of Protein Design Labs, Inc. submitted on December 17, 1999: Declaration of R. J. Poljak.	

Examiner Signature	Anne L. Holleran	Date Considered	12/15/03
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**INFORMATION DISCLOSURE  
STATEMENT BY APPLICANT**

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Page 16 of 17**Complete if Known**

Application Number	09/718,998
Filing Date	November 22, 2000
First Named Inventor	Landolfi
Art Unit	1642
Examiner Name	Anne L. Holleran
Attorney Docket Number	011823-002660US

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HL	ID	Opposition to EP 0451216, Attachment to Observations of Protein Design Labs, Inc. submitted on December 17, 1999: Declaration of J. S. Huston.	
	IE	Opposition to EP 0451216, Attachment to Observations of Protein Design Labs, Inc. submitted on December 17, 1999: Declaration of C. Queen and experimental report.	
	IF	Opposition to EP 0451216, Attachment to Observations of Protein Design Labs, Inc. submitted on December 17, 1999: Declaration of N. Tsurushita and experimental report.	
	IG	Opposition to EP 0451216, Attachment to Observations of Protein Design Labs, Inc. submitted on December 17, 1999: Declaration of W. Smith.	
	IH	Opposition to EP 0451216, Attachment to Observations of Protein Design Labs, Inc. submitted on December 17, 1999: Examiner's Reasons for Allowance for U.S. Patent No. 5,225,539.	
	II	Opposition to EP 0451216, Further Submissions of Schering Corp., February 11, 2000.	
	IJ	Opposition to EP 0451216, Further Submissions of Genentech, Inc., March 8, 2000.	
	IK	Opposition to EP 0451216, Attachment to Genentech's submissions of March 8, 2000: Declaration of Foote.	
	IL	Opposition to EP 0451216, Further Submissions of Genentech, Inc., March 13, 2000.	
	IM	Opposition to EP 0451216, Further Submissions of Protein Design Labs, Inc., March 16, 2000.	
	IN	Opposition to EP 0451216, Minutes of Oral Proceedings issued by the EPO, April 5, 2000.	
	IO	Opposition to EP 0682040 by Dr. Charles T. Harding, May 23, 2000.	
	IP	Opposition to EP 0682040 by MedImmune Inc., May 23, 2000.	
V	IQ	Opposition to EP 0682040 by Schering Corporation, May 25, 2000.	

Examiner Signature	<i>Anne L. Holleran</i>	Date Considered	12/15/03
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Opposition to EP 0682040 by Celltech Chiroscience Limited, May 25, 2000.

Opposition to EP 0682040 by XOMA (US) LLC, May 26, 2000.

Opposition to EP 0682040 by IDEC Pharmaceuticals Inc. May 26, 2000.

Opposition to EP 0682040 by Novartis, May 24, 2000.

Opposition to EP 0682040 by Boehringer Ingelheim, May 19, 2000 (in German language).

12/15/03

1. Applicant's unique citation designation number (optional). <sup>1</sup> Applicant is to place a check mark here if English language Translation is attached. This collection of information is required by 37 CFR 1.89. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 120 minutes to complete, including gathering, preparing, and submitting this completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, Washington, DC 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

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